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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,409	01/21/2004	Daniel L. Gysling	CC-0702	4896
7590	10/03/2005		EXAMINER	
Robert D. Crawford CiDRA Corporation 50 Barnes Park North Wallingford, CT 06492			LARKIN, DANIEL SEAN	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/762,409	GYSLING ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel S. Larkin	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-11 and 13-18 is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) 12 and 19-21 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 14 July 2005 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/04 &amp; 7/05</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because of the following:

Reference to "(Fig. 1)" at the top of Figure 1 should be corrected to read -- Fig. 2 -- since the text recited is shown in Figure 2.  
Reference numeral -- 32 -- should accompany reference box "Bleed Line Control Module", as shown in Figure 1.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference numerals -- 23 --, -- 24 --, and -- 223 --, as shown in Figure 7, do not appear within the written specification.

Reference labels -- Temperature --, -- Pressure --, -- Flow Rate --, -- Particle Size --, and -- Mass Flow --, as shown in Figure 7, are not provided for in the written specification.

Reference numerals -- 3 --, -- 4 --, -- 146 --, and -- 150 --, as shown in Figure 8, do not appear within the written specification.

Reference labels -- Temperature --, -- Pressure --, -- Mass Flow --, -- Particle Size --, and -- Mach Number --, as shown in Figure 8, are not provided for in the written specification.

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3. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The disclosure is objected to because of the following informalities:

Page 4, line 5: The term "DRAWING" should be corrected to read

-- DRAWINGS --.

Page 4, line 15: A brief description of Figure 6 does not appear with the "Brief Description of the Drawings" section of the application

Page 5, lines 16-20: No discussion of module 32 has been presented.

Page 6, line 8: Reference numeral -- 32 -- should be inserted after the term "module".

Page 6, line 30: The phrase -- now US 6,889,562, -- should be inserted prior to the term "in".

Page 7, line 7: The phrase -- now US 6,354,147 -- should be inserted prior to the second occurrence of the term "Serial".

Page 7, line 8: The phrase -- now US 6,732,575, -- should be inserted prior to the abbreviation "U.S.".

Page 7, line 13: The phrase -- , now US 6,354,147 -- should be inserted prior to the conjunction "and"; and the phrase -- now US 6,732,575, -- should be inserted prior to the term "knowledge".

Page 9, line 11: The phrase -- now US 6,354,147 -- should be inserted prior to the conjunction "and".

Page 9, line 12: The phrase -- now US 6,732,575, -- should be inserted prior to the term "with".

Page 9, line 15: The phrase -- now US 6,889,562, -- should be inserted prior to the term "which".

Page 10, line 16: The term "Figure" should be corrected to read -- Fig. -- in order to maintain consistency in labeling.

Page 11, line 23: The term "The" should be corrected to read -- They --.

Page 12, line 26: The second occurrence of the phrase "for this" should be deleted.

Page 12, line 29: Numeral "15" should be corrected to read -- 7 --, since this application does not have a Figure 15.

Page 13, line 1: Reference numeral "16" should be corrected to read -- 216 --.

Page 13, lines 2 and 6: Reference numerals "18-21" should be corrected to read -- 218-221 --.

Page 13, line 2: Reference numerals "22" and "14" should be corrected to read -- 222 -- and -- 214 --, respectively.

Page 13, line 5: Reference numeral "15" should be corrected to read -- 212 --.

Page 14, line 1: Reference designation "210" should be corrected to read -- 7 --.

Page 14, lines 3 and 4: The phrase "the input end or output end of the array of sensors" does not make sense.

Page 14, line 13: The letters "o" and "f" should be corrected to read -- of --.

Page 14, line 21: The phrase -- now US 6,732,575 -- should be inserted prior to the term "each".

Page 15, line 2: Reference numerals "215-218" should be corrected to read -- 115-118 --.

Page 15, line 13: Reference numeral "40" should be corrected to read -- 140 --.

Page 15, line 16: Reference numeral "244" should be corrected to read -- 144 --.

Page 15, line 24: Should reference designation "9" be corrected to read -- 6 --.

There is not a Figure 9 in this application.

Page 16, line 15: Reference numeral "220" has been previously used to represent a pressure transducer, as shown in Figure 7.

Page 16, line 16: Reference numeral "212" has been previously used to represent a flow, as shown in Figures 7 and 8.

Page 17, line 25: Reference numeral "14" should be corrected to read -- 214 --.

Page 18, line 29: Reference numeral "23" should be corrected to read -- 218-221 --.

Page 19, line 4: The text "sensors218-221" should be corrected to read -- sensors 218-221 --.

Page 19, lines 23 and 28: Reference numeral "212" should be corrected to read -- 214 --.

Page 20, line 3: Reference numeral "212" should be corrected to read -- 214 --.

Appropriate correction is required.

### ***Claim Objections***

5. Claims 12 and 19-21 are objected to because of the following informalities:

Re claim 12, claim line 3: The phrase "the process *pipe*" lacks antecedent basis.

Re claim 19, claim line 2: The article "the" prior to the term "process" should be corrected to read -- a --.

Re claim 19, claim line 5: The article -- a -- should be inserted prior to the term "bleed".

Re claim 19, claim line 6: The term -- line -- should be inserted after the term "process".

Re claim 20, claim line 1: The term -- of -- should be inserted prior to the term "measuring".

Re claim 20, claim line 2: The term "sensor" should be corrected to read -- sensors --.

Re claim 21, claim line 1: The term -- of -- should be inserted prior to the term "measuring".

Re claim 21, claim line 2: The term "sensor" should be corrected to read -- sensors --. Appropriate correction is required.

### ***Allowable Subject Matter***

6. The following is a statement of reasons for the indication of allowable subject matter:

Prior art was not relied upon to reject claims 1-21 because the prior art fails to teach and/or make obvious the following:

Claims 1-13: Providing a device comprising a third module responsive to a first signal and a second signal, for providing a third signal containing information about a dissolved air/gas flowing in a process line based on a difference between the sensed entrained air/gas and a sensed bleed line entrained air/gas, wherein the first signal is

representative of sensed entrained air/gas in a fluid or process mixture flowing in a process line, and the second signal is representative of sensed entrained air/gas in the fluid or process mixture flowing in the bleed line in combination with all of the remaining limitations of the claim.

Claims 14-13: Providing a device for measurement of entrained and dissolved gases in a fluid or process mixture flowing in a primary process line, the device comprising: a dissolved air/gas determination processor module responsive to a first entrained measurement module signal and a second entrained air measurement module signal, for providing a dissolved air/gas determination processor module signal containing information about a dissolved air/gas in the fluid or process mixture flowing in a primary process line based on a difference between a sensed primary process line entrained air and a sensed bleed line entrained air in combination with all of the remaining limitations of the claim.

Claims 19-21: Providing a method for measuring entrained and dissolved gas in a fluid or process mixture flowing in a process line at a process line pressure, comprising the steps of: measuring a first entrained gas in the fluid or process mixture flowing in the process line; measuring a second entrained gas in the fluid or process mixture flowing in a bleed line; and determining a dissolved air/gas flowing in the process line based on a difference between the first entrained air/gas and the second bleed line entrained air/gas in combination with all of the remaining limitations of the claim.

The closest prior art, US 6,354,147, teaches determining the amount of entrained air within a process mixture flowing in a process line. Alternatively, the prior art to EP 484876 teaches determining the bubble content of a process fluid that is diverted through a bleed line; however, the prior art fails to teach comparing a measurement from a process line to a measurement of the fluid which has been diverted from the process line and determining the entrained air in the flow from the difference of the two measurements.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art to US 5,589,642 (Agar et al.) discloses a high void fraction multi-phase fluid flow meter comprising a process line (10) with a flow meter (18) for measuring the gas content of the process flow; a by-pass line (12) also with a flow meter (22) for measuring the gas content of the fluid within the by-pass line (12); and a computer (30) for determining a combined total gas flow measured by the flow meters (18, 22).

8. This application is in condition for allowance except for the following formal matters:

See above paragraphs 1-5.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin  
AU 2856  
28 September 2005



DANIEL S. LARKIN  
PRIMARY EXAMINER